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**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**[Docket No. 200407-0102]**

**RTID 0648-XW013**

**Endangered and Threatened Wildlife; 90-day Finding on a Petition to List Oregon Coast Spring-run Chinook Salmon as Threatened or Endangered Under the Endangered Species Act**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce.

**ACTION:** 90-day petition finding, request for information, and initiation of status review.

**SUMMARY:** We, NMFS, announce a 90-day finding on a petition to list spring-run Chinook salmon (*Oncorhynchus tshawytscha*) on the Oregon coast (OC) as a threatened or endangered Evolutionarily Significant Unit (ESU) under the Endangered Species Act (ESA) and to designate critical habitat concurrently with the listing. We find that the petition presents substantial scientific information indicating the petitioned action may be warranted. We will conduct a status review of OC spring-run Chinook salmon to determine whether the petitioned action is warranted. To ensure that the status review is comprehensive, we are soliciting scientific and commercial information pertaining to this species from any interested party.

**DATES:** Scientific and commercial information pertinent to the petitioned action must be received by *[insert date 60 days after date of publication in the **FEDERAL REGISTER**]*.

**ADDRESSES:** You may submit data and information relevant to our review of the status of Oregon Coast spring-run Chinook, identified by “Oregon Coast spring-run Chinook salmon Petition (NOAA-NMFS-2019-0130),” by either of the following methods:

- *Federal eRulemaking Portal:* Go to [www.regulations.gov/#!docketDetail;D= NOAA-NMFS-2019-0130](http://www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2019-0130), click the “Comment Now” icon, complete the required fields, and enter or attach your comments.
- *Mail or hand-delivery:* Protected Resources Division, West Coast Region, NMFS, 1201 NE Lloyd Blvd., Suite #1100, Portland, OR 97232. Attn: Gary Rule.

*Instructions:* Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on <http://www.regulations.gov> without change. All personal identifying information (*e.g.*, name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. We will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous).

Electronic copies of the petition and other materials are available from the NMFS website at [www.fisheries.noaa.gov/rules-and-regulations](http://www.fisheries.noaa.gov/rules-and-regulations).

**FOR FURTHER INFORMATION CONTACT:** Gary Rule, NMFS West Coast Region, at [gary.rule@noaa.gov](mailto:gary.rule@noaa.gov), (503) 230-5424; or Heather Austin, NMFS Office of Protected Resources, at [heather.austin@noaa.gov](mailto:heather.austin@noaa.gov), (301) 427-8422.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On September 24, 2019, the Secretary of Commerce received a petition from the Native Fish Society, Center for Biological Diversity, and Umpqua Watersheds (hereafter, the Petitioners) to identify OC spring-run Chinook salmon as a separate ESU and list the ESU as threatened or endangered under the ESA. Previously, in 1999, we identified the OC Chinook salmon ESU as including both spring-run and fall-run Chinook salmon and determined that the ESU did not warrant listing as threatened or endangered under the ESA. The Petitioners are requesting that OC spring-run Chinook salmon be considered as a separate ESU and listed as threatened or endangered. The Petitioners assert that new research into the genomic basis for premature migration in salmonids demonstrates that significant genetic differences underlie the spring- and fall-run life history types, and that the unique evolutionary lineage of spring-run Chinook salmon warrants their listing as a separate ESU. The Petitioners also request the designation of critical habitat for OC spring-run Chinook salmon concurrent with ESA listing. The petition includes an overview of new research into the genomic basis for premature migration in salmonids, as well as general biological information about OC spring-run Chinook salmon including their distribution and range, life history characteristics, habitat requirements, as well as basin-level population status and trends and factors contributing to the populations' status. Copies of the petition are available as described above (see ADDRESSES, above).

*ESA Statutory, Regulatory, and Policy Provisions, and Evaluation Framework*

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and to promptly publish such finding in the **Federal Register** (16 U.S.C.

1533(b)(3)(A)). When it is found that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a “positive 90-day finding”), we are required to promptly commence a review of the status of the species concerned during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the review with a finding as to whether, in fact, the petitioned action is warranted within 12 months of receipt of the petition. Because the finding at the 12-month stage is based on a more thorough review of the available information, as compared to the narrow scope of review at the 90-day stage, a positive 90-day finding does not prejudice the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include subspecies and, for any vertebrate species, any distinct population segment (DPS) that interbreeds when mature (16 U.S.C. 1532(16)). In 1991, we issued the Policy on Applying the Definition of Species Under the Endangered Species Act to Pacific Salmon (ESU Policy; 56 FR 58612; November 20, 1991), which explains that Pacific salmon populations will be considered a DPS, and hence a “species” under the ESA, if it represents an “evolutionarily significant unit” of the biological species. The two criteria for delineating an ESU are: 1) It is substantially reproductively isolated from other conspecific populations, and 2) it represents an important component in the evolutionary legacy of the species. The ESU Policy was used to define the OC Chinook salmon ESU in 1998 (63 FR 11482; March 9, 1998), and we use it exclusively for defining distinct population segments of Pacific salmon. A joint NMFS–U.S. Fish and Wildlife Service (USFWS) (jointly, “the Services”) policy clarifies the Services’ interpretation of the phrase “distinct population segment” for the purposes of listing, delisting, and reclassifying a species under the ESA (DPS Policy; 61 FR 4722; February 7, 1996). In announcing this policy,

the Services indicated that the ESU Policy for Pacific salmon was consistent with the DPS Policy and that NMFS would continue to use the ESU Policy for Pacific salmon.

A species, subspecies, or DPS is “endangered” if it is in danger of extinction throughout all or a significant portion of its range, and “threatened” if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA sections 3(6) and 3(20), respectively, 16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following five ESA section 4(a)(1) factors: the present or threatened destruction, modification, or curtailment of habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting the species’ continued existence (16 U.S.C. 1533(a)(1)(A)-(E), 50 CFR 424.11(c)(1)-(5)).

ESA-implementing regulations issued jointly by NMFS and USFWS (50 CFR 424.14(h)(1)(i)) define “substantial scientific or commercial information” in the context of reviewing a petition to list, delist, or reclassify a species as “credible scientific or commercial information in support of the petition’s claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted.” Conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial information.” In reaching the initial 90-day finding on the petition, we consider the information described in sections 50 CFR 424.14(c), (d), and (g) (if applicable).

Our determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted depends in part on the degree

to which the petition includes the following types of information: (1) Information on current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2) identification of the factors under section 4(a)(1) of the ESA that may affect the species and where these factors are acting upon the species; (3) whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the ESA may cause the species to be an endangered species or threatened species (*i.e.*, the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) information on the adequacy of regulatory protections and effectiveness of conservation activities by States as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) a complete, balanced representation of the relevant facts, including information that may contradict claims in the petition. *See* 50 CFR 424.14(d).

If the petitioner provides supplemental information before the initial finding is made and states that it is part of the petition, the new information, along with the previously submitted information, is treated as a new petition that supersedes the original petition, and the statutory timeframes will begin when such supplemental information is received. *See* 50 CFR 424.14(g).

We also consider information readily available at the time the determination is made. We are not required to consider any supporting materials cited by the petitioner if the petitioner does not provide electronic or hard copies, to the extent permitted by U.S. copyright law, or appropriate excerpts or quotations from those materials (*e.g.*, publications, maps, reports, and letters from authorities). *See* 50 CFR 424.14(h)(1)(ii).

The “substantial scientific or commercial information” standard must be applied in light of any prior reviews or findings we have made on the listing status of the species that is the subject of the petition. Where we have already conducted a finding on, or review of, the listing status of that species (whether in response to a petition or on our own initiative), we will evaluate any petition received thereafter seeking to list, delist, or reclassify that species to determine whether a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted despite the previous review or finding. Where the prior review resulted in a final agency action – such as a final listing determination, 90-day not-substantial finding, or 12-month not-warranted finding – a petitioned action will generally not be considered to present substantial scientific and commercial information indicating that the action may be warranted unless the petition provides new information or analyses not previously considered.

At the 90-day finding stage, we do not conduct additional research, and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioner’s sources and characterizations of the information presented if they appear to be based on accepted scientific principles, unless we have specific information in our files that indicates the petition’s information is incorrect, unreliable, obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person conducting an impartial scientific review would conclude it supports the petitioner’s assertions. In other words, conclusive information indicating that the species may meet the ESA’s requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information alone necessitates a

negative 90-day finding if a reasonable person conducting an impartial scientific review would conclude that the unknown information itself suggests the species may be at risk of extinction presently or within the foreseeable future.

To make a 90-day finding on a petition to list a species, we evaluate whether the petition presents substantial scientific or commercial information indicating the subject species may be either threatened or endangered, as defined by the ESA. First, we evaluate whether the information presented in the petition, in light of the information readily available in our files, indicates that the petitioned entity constitutes a “species” eligible for listing under the ESA. Next, we evaluate whether the information indicates that the species faces an extinction risk such that listing, delisting, or reclassification may be warranted; this may be indicated in information expressly discussing the species’ status and trends, or in information describing impacts and threats to the species. We evaluate any information on specific demographic factors pertinent to evaluating extinction risk for the species (*e.g.*, population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate the potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1).

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of general factors that could negatively impact a species, alone, do not constitute substantial information indicating that listing may be warranted. We look for information indicating that not only is the particular species exposed to a



factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

### **Previous Federal Actions**

On March 9, 1998, following completion of a comprehensive status review of Chinook salmon (*O. tshawytscha*) populations in Washington, Oregon, Idaho, and California, NMFS published a proposed rule to list seven Chinook salmon ESUs as threatened or endangered under the ESA (63 FR 11482). In this proposed rule, NMFS identified the Oregon Coast (OC) Chinook salmon ESU as comprised of coastal populations of spring- and fall-run chinook salmon from the Elk River north to the mouth of the Columbia River (63 FR 11482). NMFS did not propose to list the OC ESU of Chinook salmon under the ESA, concluding that the ESU was neither in danger of extinction nor likely to become endangered in the foreseeable future. This proposed rule was followed by a final rule to list four Chinook salmon ESUs as threatened or endangered under the ESA, which NMFS published on March 24, 1999 (64 FR 14308). After assessing information concerning Chinook salmon abundance, distribution, population trends, and risks, and after considering efforts being made to protect Chinook salmon, NMFS determined in this final rule that the OC ESU of Chinook salmon did not warrant listing under the ESA.

### **Evaluation of Petition and Information Readily Available in NMFS' Files**

The petition contains information and assertions in support of designating and listing the spring-run component of the OC Chinook salmon ESU as threatened or endangered under the ESA. As discussed above, based on biological, genetic, and ecological information compiled and reviewed as part of a previous West Coast Chinook salmon status review (Myers *et al.*, 1998), we included all spring-run and fall-run Chinook salmon populations in river basins from the Elk River north to the mouth of the Columbia River in the OC Chinook salmon ESU (63 FR 11482;

March 9, 1998). While run-timing was recognized as having a heritable basis, review of genetic data at that time did not identify clear sub-groups associated with migration timing within the OC Chinook salmon ESU. Spring- and fall-run Chinook salmon were found to be separate ESUs in other areas (e.g., in the upper Columbia River, Snake River, and Sacramento River drainages). However, in coastal areas life-history and genetic differences between runs were found to be relatively modest, with spring- and fall-run fish exhibiting similar ocean distribution patterns and genetic characteristics (Myers *et al.*, 1998).

The Petitioners assert that spring-run Chinook salmon in the OC Chinook salmon ESU have been sufficiently isolated from fall-run Chinook salmon for evolutionarily important differences to have arisen and been maintained. The Petitioners present new genetic evidence to suggest the OC spring-run Chinook salmon populations may qualify as a separate ESU from the fall-run populations. The Petitioners assert that findings from recently published articles on the evolutionary basis of premature migration in Pacific salmon (Prince *et al.*, 2017; Davis *et al.*, 2017; Narum *et al.*, 2018; and Thompson *et al.*, 2019) indicate that spring-run Chinook salmon in the OC ESU should be considered a separate ESU. Prince *et al.* (2017) reported on a survey of genetic variation between mature- and premature-migrating populations of steelhead and Chinook salmon from California, Oregon, and Washington. Narum *et al.* (2018) replicated analysis of loci identified by Prince *et al.* (2017) as associated with premature and mature migratory phenotypes. Davis *et al.* (2017) genotyped Chinook salmon within the Siletz River using multiple genetic markers, including neutral markers and adaptive loci associated with migratory timing. Thompson *et al.* (2019) provide additional information about genetic differentiation between mature- and premature-migrating Chinook salmon in the Rogue River, Oregon, and in the Klamath River, California, particularly in response to anthropogenic changes.

The Petitioners suggest that the results of these studies indicate that premature migration (*e.g.* spring-run Chinook salmon) arose from a single evolutionary event within the species and, if lost, is not likely to re-evolve in time frames relevant to conservation planning.

The Petitioners also assert that the Chinook salmon spring-run life history represents an important component of the evolutionary legacy of the species. In support of this assertion, the Petitioners describe specific ecological and evolutionary benefits of the life history variation provided by spring-run stocks within the OC Chinook salmon ESU. The Petitioners describe how spring-run Chinook salmon tend to spawn higher up in the watershed than fall-run and how this adds to the spatial distribution of the species. We have reviewed the new genetic information and the information presented by the Petitioners about the evolutionary legacy of spring-run Chinook salmon. Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person may conclude that OC spring-run Chinook salmon could qualify as an ESU pursuant to our ESU Policy.

#### *OC Spring-run Chinook salmon status and trends*

The Petitioners assert that spring-run Chinook salmon populations in the OC ESU have suffered significant declines in numbers from historical abundance. The Petitioners assert that former spring-run populations in the Siuslaw, Coos, and Salmon rivers are apparently extirpated and that small, very depressed populations of spring-run Chinook salmon remain in the Tillamook, Nestucca, Siletz, Alsea, and Coquille Rivers (Percy *et al.*, 1974; Nicholas and Hankin 1989; Kostow *et al.*, 1995; ODFW, 2005; ODFW, 2017; ODFW, 2018 unpublished data; Rasmussen and Nott, 2019). The Oregon Native Fish Status Report (ODFW, 2005) concluded that the Siletz spring-run Chinook salmon population, although small, passed all assessment criteria and was not considered at risk. ODFW (2005) further found that spring-run Chinook

salmon populations in the Coquille and Alsea Rivers were sufficiently spatially diverse, independent, and free of hybridization, but due to chronically low adult returns were still considered potentially at risk. Citing the above information sources and adult counts at Winchester Dam, the Petitioners also assert that the North Umpqua River supports the only remaining large spring-run Chinook salmon population in the OC ESU, but conclude recent surveys by the USFS and viability analyses by other researchers (Ratner and Lande, 1996) indicate the South Umpqua River run has been severely depleted.

The Petitioners also call attention to the Oregon Department of Fish and Wildlife's Coastal Multi-Species Conservation and Management Plan (CMP) (ODFW, 2014) and fish counts at Winchester Dam (ODFW, 2019) in support of their assertions that spring-run Chinook salmon populations are at risk of extinction. The CMP is the State of Oregon's plan for long-term conservation of naturally-produced salmon, steelhead, and trout on the Oregon Coast. The CMP identifies populations within the OC Chinook salmon ESU, and recognizes that while there are spring-run life history variants present in many of the OC Chinook salmon populations, only the North and South Umpqua Rivers support runs that are sufficiently isolated to be considered independent spring-run Chinook salmon populations (ODFW, 2014). Spring-run Chinook salmon in the North Umpqua River were found to be viable, although with a decreasing trend in abundance (1972-2010). South Umpqua spring-run Chinook salmon had a low extinction risk (<5%) and an increasing trend in abundance (1972-2010), but the population was considered non-viable because the current abundance was low and carrying capacity estimated to be less than necessary to maintain evolutionary potential to persist in future conditions (ODFW, 2014). The CMP assessments for OC Chinook salmon populations outside of the Umpqua Basin, which

use the predominant fall-run Chinook salmon to evaluate population viability, found all populations were viable except for Elk River.

The Oregon Department of Fish and Wildlife maintains a fish counting station at Winchester Dam, located approximately 118 river miles from the Pacific Ocean, near the town of Roseburg on the North Umpqua River. Although the most recent (2011-2018) average Winchester Dam counts of spring-run Chinook salmon in the North Umpqua show an improvement over historic lows, these counts indicate a decreasing trend of natural-origin adult returns over the last eight years (ODFW, 2019). Fieldwork conducted in 2019 by an inter-agency team confirmed that abundance of spring-run Chinook salmon in the South Umpqua remains low after recent declines (Kruzic, 2019).

Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person would conclude current demographic risks indicate that OC spring-run Chinook salmon populations may be at risk of extinction and thus warrant further investigation.

#### *Analysis of ESA Section 4(a)(1) Factors*

The Petitioners assert that all five ESA section 4(a)(1) factors contribute to the need to list the OC spring-run Chinook salmon as a threatened or endangered ESU. Specifically, the Petitioners assert that several factors are known to be contributing to the destruction and modification of OC spring-run Chinook salmon habitat and curtailment of its range, that existing regulatory mechanisms are inadequate to protect the spring-run component of the existing ESU, and that other natural and manmade factors are negatively affecting the continued existence of spring-run Chinook salmon on the Oregon Coast. Petitioners further assert that there is insufficient information to determine the extent to which disease, predation, and overutilization

are affecting OC spring-run Chinook salmon, and that available evidence suggests there are existing negative impacts associated with all of these factors.

*The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

The Petitioners assert that OC spring-run Chinook salmon face numerous threats to suitable habitat, including impacts from historical and ongoing logging practices, agricultural practices, channelization, and urbanization. NMFS' most recent OC coho salmon status review (NMFS, 2016) evaluated the status of habitat threats over an area almost completely co-extensive with the range of OC spring-run Chinook salmon and concluded that degraded habitat conditions in this area continue to be of concern, particularly with regard to land use and development activities that affect the quality and accessibility of habitats and habitat-forming processes.

The Petitioners assert that habitat degradation due to logging and roads reduces stream shade, increases fine sediment levels, reduces levels of in-stream large wood, and alters watershed hydrology, which is supported by similar conclusions in NMFS' 2011 Final Rule listing OC coho salmon under the ESA (76 FR 35755), describing habitat that is co-extensive with the range of OC spring-run Chinook salmon. The Petitioners specifically assert that extensive logging can be harmful to spring-run Chinook salmon populations by causing depletion of summer and early fall streamflows needed for adult migration, holding, and spawning. Perry and Jones (2017) found that after an initial delay, base streamflows were substantially decreased for decades in logged areas as compared to pre-logging conditions. The Petitioners also assert that timber harvest and road construction harm OC spring-run Chinook salmon by altering stream flow, increasing sediment loading, contaminant concentrations, and temperatures, and decreasing dissolved oxygen. References to NMFS' 2011 OC Coho salmon

listing (76 FR 35755) and U.S. Bureau of Land Management analysis of timber harvest in the Siletz River watershed (USBLM 1996) support their assertion.

The Petitioners further assert that dams, water diversions, and other barriers impact OC spring-run Chinook salmon by blocking suitable riverine habitat, impeding migration, and reducing water quality and quantity. NMFS' 2011 OC coho listing concluded that fish passage has been blocked in many streams by improperly designed culverts and is limited in estuaries by tide gates in the range of the OC coho salmon ESU. The Petitioners assert that large dams significantly reduce the amount of spawning and rearing habitat accessible to migrating Chinook salmon. However, the Oregon Native Fish Status Report (ODFW, 2005) concluded that essentially all potential OC spring-run Chinook salmon habitat remains accessible (although recognizing this assessment did not capture fine-scale blockages such those caused by culverts). The Petitioners also assert that dams (large and small), reservoirs, diversions, and other barriers can significantly delay upstream and downstream migration. The most recent NMFS status review of OC coho salmon (NMFS, 2016) recognizes that impeded fish passage and habitat access is a concern in many watersheds within their range, although this is not considered a primary limiting factor.

The Petitioners assert that dams and diversions also have the potential to decrease downstream flows, and that decreased summer and fall baseflows can result in increased water temperatures that are harmful to OC spring-run Chinook salmon. As referenced in the petition and NMFS' most recent status review of OC Chinook salmon (Myers *et al.*, 1998) Bottom *et al.* (1985) cited low streamflows and high summer temperatures exacerbated by water withdrawals as problems for many streams (notably Tillamook Bay tributaries and Alsea, Siletz, Siuslaw, and Umpqua Rivers). The 2016 NMFS status review of OC coho salmon recognizes water quality

and quantity as primary or secondary limiting factors for many coastal basins, and the Oregon CMP (ODFW 2014) lists low flows and high temperatures as primary limiting factors for OC spring-run Chinook salmon.

The Petitioners also highlight other ongoing anthropogenic disturbances that may cause habitat degradation, including gravel mining, pollutants, and stream channelization, which is consistent with findings in NMFS' 2011 Final Rule to list OC coho salmon and limiting factors (particularly reduced habitat complexity) identified in the 2016 NMFS OC coho salmon status review.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person may conclude that habitat destruction and curtailment of their range pose a threat to the continued existence of OC spring-run Chinook salmon.

#### *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

The Petitioners assert that harvest of OC spring-run Chinook salmon in commercial and recreational fisheries in the ocean may be a threat. However, due to the mixed stock nature of these fisheries, the Petitioners note that it is extremely difficult to identify harvest rates for and the level of impact on OC spring-run Chinook salmon. The 2018 stock assessment and fishery evaluation document for the Pacific Coast Salmon Fishery Management Plan (PFMC, 2018) reports harvest relative to management objectives set for OC Chinook salmon, which combine all run timing variants within northern and central Oregon Coast Chinook salmon stock complexes. Based on peak adult index spawner counts and estimates of adult escapement in 2018, the aggregate northern and central Oregon Coast escapement goal was likely met, and available exploitation rate data indicate OC Chinook salmon were not overfished (PFMC, 2018).



However, the Petitioners assert that because these estimates do not distinguish between fall- and spring-run ocean harvest, the impacts of harvest could be greater on small populations of spring-run Chinook salmon within the ESU.

The Petitioners assert that catch card data from recreational fishermen and other unpublished freshwater harvest data indicate that in-river fisheries can harvest large portions (40-60%) of returning adults in Oregon Coast watersheds, but that the freshwater harvest rates of naturally produced spring-run Chinook salmon stocks remains unknown for most populations. PFMC (2018) reports total estuary and freshwater harvest of OC spring-run Chinook salmon ranged from 9,400 to 18,700 adults between 2010 and 2017, as compared to harvest of fall-run OC Chinook salmon which ranged from 44,100 to over 117,000 in the same timeframe. Population-specific harvest data are also available from ODFW for OC spring-run Chinook salmon in all of the major basins for which abundance and trends were discussed by the Petitioners (ODFW, 2019), although standard abundance estimates needed to calculate proportion of run harvested for spring-run Chinook salmon are not readily available for many tributaries outside of the Umpqua Basin.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that there is inadequate information for a reasonable person to determine if overutilization poses a threat to the continued existence of OC spring-run Chinook salmon.

#### *Disease or Predation*

The Petitioners assert that the extent to which predation affects OC spring-run Chinook salmon is unknown, but predation by avian, marine mammal, and non-native fish have the potential to negatively impact abundance. The Petitioners note that introduced predators such as smallmouth bass are a threat to spring-run Chinook salmon, particularly in the South Umpqua

River (ODFW, 2014). The Petitioners also assert that hatchery-reared fish and outplanted carcasses in Oregon Coast watersheds are likely a vector for spreading common diseases known to affect spring-run Chinook salmon on the Oregon Coast, including Furunculosis, Cold Water Diseases, Trichodinids, and bacterial kidney disease, because these diseases are known to be associated with artificially rearing fish in high densities.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that there is inadequate information for a reasonable person to determine if disease or predation pose a threat to the continued existence of OC spring-run Chinook salmon.

#### *Inadequacy of Existing Regulatory Mechanisms*

The Petitioners assert that existing federal and state regulatory mechanisms are not sufficient to protect and recover OC spring-run Chinook salmon and their habitat. Although the petitioners found harvest to be a concern above, the focus of their discussion in this section is on regulatory mechanisms for habitat protection.

The Petitioners state that co-occurrence of OC spring-run Chinook salmon with other ESA-listed species does afford them some habitat benefits where their ranges overlap. The range of spring-run Chinook salmon overlaps substantially with listed OC coho salmon and therefore falls almost entirely within OC coho salmon designated critical habitat. However, the Petitioners assert that there is little evidence that improved habitat protections under the ESA since OC coho salmon were listed have resulted in actions sufficient to lead to recovery of either species.

The Petitioners assert that the U.S. Bureau of Land Management's resource management plans do not provide adequate protection for OC spring-run Chinook salmon. The Petitioners assert that allowable logging practices and aquatic conservation strategies under the resource management plans do not effectively protect OC spring-run Chinook salmon habitat. The

Petitioners cite NMFS' comments in its review of the draft Environmental Impact Statement for the revision of the resource management plans (NMFS, 2015b) and later comments by conservation groups (NFS, 2015, American Rivers *et al.*, 2016) to support their claim that the resource management plans are not sufficient to adequately maintain and restore riparian and aquatic habitat necessary for conservation of anadromous fish.

The Petitioners also assert that the U.S. Forest Service's forest plans do not provide adequate protection for OC spring-run Chinook salmon. The Petitioners contend that the National Forest Management Act does not effectively limit long-term impacts to salmon habitat in Oregon Coast watersheds because it does not prohibit the U.S. Forest Service from carrying out management actions and projects that harm the species or habitat. Petitioners also contend that National Forest Plans have limited ability to protect OC Chinook salmon habitat because National Forest lands make up a small portion of Oregon Coast watersheds relative to private lands.

The Petitioners further assert that the licensing process for non-federal hydropower projects does not necessarily provide adequate protections for OC spring-run Chinook salmon. The Federal Power Act mandates that when issuing licenses the Federal Energy Regulatory Commission include conditions to protect, mitigate and enhance fish and wildlife affected by hydropower projects. The petitioners assert that although the Commission must seek recommendations from the U.S. Fish and Wildlife Service and NMFS, the Commission can reject such measures if they determine there is not substantial evidence of need, and the timeline of most licenses (30-50 years) limits the opportunity for future improvements. Petitioners also assert that water quality protections under the Coastal Zone Management Act and Clean Water Act are not adequately protective of OC spring-run Chinook salmon habitat. The Petitioners cite

to NOAA's and the Environmental Protection Agency's findings that Oregon's coastal nonpoint pollution control program is inadequate (NOAA and EPA, 2013), and NMFS' conclusion that Clean Water Act programs are not sufficient to protect Oregon Coast coho salmon habitat (NMFS, 2015).

The Petitioners additionally assert that State forest management is also not adequately protective of salmon habitat. The Petitioners cite NMFS' comments, from the 2011 Final Rule listing OC coho salmon under the ESA (76 FR 35755), that the Oregon Forest Practices Act may not adequately protect OC coho salmon habitat in support of their assertion that it is therefore unlikely to protect OC spring-run Chinook salmon habitat. The Petitioners further point to an evaluation by Talberth and Fernandez (2015), which found the Oregon Forest Practices Act does not provide stream buffers in all areas adequate to protect water quality and habitat for fish and wildlife and allows clearcutting in areas prone to landslides and with cold-water fish habitat, in support of their conclusion that the Act does not adequately limit harmful clearcutting practices. The Petitioners also assert that the 2010 Northwest Oregon Forest Management Plan and the Elliot Forest Management Plan do not contain sufficient measures to manage or protect OC spring-run Chinook salmon and, in support of this claim, reference NMFS' 2011 OC coho listing Final Rule which stated NMFS was unable to conclude these plans provide for OC coho salmon habitat capable of supporting viable populations during both good and poor marine conditions.

The Petitioners point out that there have been various state watershed and salmon management plans with goals for protecting and recovering salmon, including the 1991 Coastal Chinook Salmon Plan, 1997 Oregon Coastal Salmon Restoration Initiative, Siletz and Alsea River Basin Fish Management Plans, 2006 Oregon Conservation Strategy, and 2014 Coastal Multispecies Conservation and Management Plan. However, Petitioners assert that despite all of

these plans, OC spring-run Chinook salmon populations have continued to decline or remain at depressed levels, and state land managers continue to allow logging and other activities and programs that may harm salmon and degrade their habitat, indicating these plans are inadequate to protect OC spring-run Chinook salmon.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person would conclude that the inadequacy of existing regulatory mechanisms may pose a threat to the continued existence of OC spring-run Chinook salmon.

#### *Other Natural or Manmade Factors Affecting Its Continued Existence*

##### Hatcheries

The Petitioners assert that fish hatcheries have negative impacts on OC spring-run Chinook salmon by causing competition in the wild between hatchery and wild fish, supporting mixed-stock fisheries that have disproportionately harmed wild Chinook salmon, and promoting hybridization between spring and fall-run Chinook salmon. The Petitioners assert that hatchery programs within the OC Chinook salmon ESU are intended for fisheries augmentation, and there are no conservation or reintroduction hatchery programs at this time.

The Oregon CMP (ODFW, 2014) has recognized hatcheries as a primary limiting factor for OC Chinook salmon in the Elk River, a secondary risk factor for stocks in the Salmon River, and a potential limiting factor for other OC Chinook salmon populations in the ESU as well as OC spring-run Chinook salmon in the Umpqua Basin. The risk associated with hatcheries as a limiting factor for these populations is primarily due to the potential genetic impacts of hatchery fish interbreeding with natural-origin fish on spawning grounds, although not specifically interbreeding between fall- and spring-run Chinook salmon. The potential for competition

between naturally-produced and hatchery-origin fish is also recognized. However, the specific effects of coastal hatchery programs have not been systematically assessed (ODFW 2014).

#### Climate Change and Ocean Conditions

The Petitioners also assert that ongoing threats of poor ocean conditions and climate change are likely to threaten the continued existence of OC spring-run Chinook salmon. As described in NMFS' status reviews (Stout *et al.*, 2011; NMFS, 2016) and ESA listing of OC coho salmon (76 FR 35755), variability in ocean conditions in the Pacific Northwest is a concern for the persistence of Oregon Coast salmonids because it is uncertain how populations will fare in periods of poor ocean survival when freshwater and estuarine habitats are degraded. The Petitioners also cite these NMFS sources to support their assertions that predicted effects of climate change are expected to negatively affect Oregon Coast salmonids through many different pathways, and cite the Oregon CMP (ODFW, 2014) in support of their statement that regional changes in climate and weather patterns will negatively impact Oregon coastal aquatic ecosystems and salmonids.

The Petitioners also assert that predicted climate change impacts on streamflows will be exacerbated by continued forest land use practices. The Petitioners cite studies demonstrating recent declines in Pacific Northwest streamflows and predicting increasing temperatures in downstream reaches (Luce and Holden, 2009; Isaak et al., 2018) in support of their assertion that decreases in streamflow caused by logging will exacerbate streamflow decreases and temperature increases likely to occur due to climate change.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person may conclude that hatcheries and climate change may pose threats to the continued existence of OC spring-run Chinook salmon.

## **Petition Finding**

After reviewing the information contained in the petition, as well as information readily available in our files, we conclude the petition presents substantial scientific information indicating that the petitioned action to delineate an OC spring-run Chinook salmon ESU and list it as threatened or endangered under the ESA may be warranted. Therefore, in accordance with section 4(b)(3)(A) of the ESA and NMFS' implementing regulations (50 CFR 424.14(h)(2)), we will commence a status review to determine whether the spring-run populations of OC Chinook salmon constitute an ESU, and, if so, whether that OC spring-run Chinook salmon ESU is in danger of extinction throughout all or a significant portion of its range, or likely to become so within the foreseeable future throughout all or a significant portion of its range. After the conclusion of the status review, we will make a finding as to whether listing the OC spring-run Chinook salmon ESU as endangered or threatened is warranted as required by section 4(b)(3)(B) of the ESA.

## **Information Solicited**

To ensure that our status review is informed by the best available scientific and commercial data, we are opening a 60-day public comment period to solicit information on spring-run Chinook salmon in the OC Chinook salmon ESU. We request information from the public, concerned governmental agencies, Native American tribes, the scientific community, agricultural and forestry groups, conservation groups, fishing groups, industry, or any other interested parties concerning the current and/or historical status of spring-run Chinook salmon in the OC Chinook salmon ESU. Specifically, we request information regarding: (1) species abundance; (2) species productivity; (3) species distribution or population spatial structure; (4) patterns of phenotypic, genotypic, and life history diversity; (5) habitat conditions and associated

limiting factors and threats; (6) ongoing or planned efforts to protect and restore the species and their habitats; (7) information on the adequacy of existing regulatory mechanisms, whether protections are being implemented, and whether they are proving effective in conserving the species; (8) data concerning the status and trends of identified limiting factors or threats; (9) information on targeted harvest (commercial and recreational) and bycatch of the species; (10) other new information, data, or corrections including, but not limited to, taxonomic or nomenclatural changes; and (11) information concerning the impacts of environmental variability and climate change on survival, recruitment, distribution, and/or extinction risk.

We request that all information be accompanied by: (1) supporting documentation such as maps, bibliographic references, or reprints of pertinent publications; and (2) the submitter's name, address, and any association, institution, or business that the person represents.

## **References**

A complete list of all references cited herein is available upon request (See **FOR FURTHER INFORMATION CONTACT**).

**Authority:** The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: April 8, 2020.

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Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs,

National Marine Fisheries Service.

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